

THIR UNIVERD SHAVERS OF AMERICA

TO AUL TO WHOM THESE PRESERIES SHAUL COME: Unshington State Unibersity Research Joundation

THE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY TARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE GHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PUBLIC REPOSES, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Masami'

In Testimonn Thereof, I have hereunto set my hand and caused the seal of the Hunt Haristy Frotestion Office to be affixed at the City of Washington, D.C. this fifth day of March, in the syear two thousand and seven.

Au 1

Ol m John

Commissioner Plant Variety Protection Office Agricultural Marketing Service Secretary iculture

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER Let the S.	SIGNATURE OF OWNER		
NAME (Please print or type) Dr. Keith Jones	NAME (Please print or type)		7
Director, Washington State University Research Foundation DATE 2014 1014 2006	CAPACITY OR TITLE	DATE	

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). NEW: With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety per se, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for Issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office

Telephone: (301) 504-5518 FAX: (301) 504-5291

General E-mail: PVPOmail@usda.gov

Homepage: http://www.ams.usda.gov/science/pvpo/PVPindex.htm

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. http://www.ams.usda.gov/isg/seed.htm.

ITEM

19a. Give:

- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
- (2) the details of subsequent stages of selection and multiplication;
- (3) evidence of uniformity and stability; and
- (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
 - (1) identify these varieties and state all differences objectively;
 - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- 20. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
- 23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- 24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.
- 22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)
- 23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Foundation seed of Masami was sold on 8/18/05 by the Washington State Crop Improvement Association.

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

EXHIBIT A – BREEDING HISTORY

'MASAMI'

1. Genealogy: 'MacVicar' (PI 552427) /PI 561031 ('VPM'/'Moisson 951'//2* 'Hill81')

2. Stages of Selection and Multiplication:

1989: Final cross made: WSU research land

1990: F₁ generation; advanced on WSU research land; all plants uniform.

1991: F₂ bulk population; WSU research land; selected 150 random spikes; segregating for maturity, plant height, awn length and disease resistance.

1992: F₃ hill plots; WSU research land; selected 50 random spikes; segregating for maturity, plant height, awn length and disease resistance.

1993: F_{3:4} head rows; WSU research land; selected row based on appropriate plant height, maturity, and disease resistance; no variants were observed within the single hill.

1994: F_{3:5} single plot (tested as VO95065); WSU research land; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

1995: F_{3:6} Preliminary Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

1996: F_{3:7} Preliminary Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

1997: F_{3:8} State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

1998: F_{3:9} State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

Exhibit A – BREEDING HISTORY, cont.

1999: F_{3:10} State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

2000: F_{3:11} State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

2001: F_{3:12} State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality..

2002: F_{3:13} WSU Commercial Variety Trial, State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

2003: F_{3:14} WSU Commercial Variety Trial, State Advanced Yield Trial; replicated yield trial at multiple locations in Washington State; selection based on field resistance to stripe rust and foot rot, test weight, grain yield, and milling/baking quality.

Individual F_{3:14} heads (2000) of WA007916 were hand threshed and separately planted in 10 ft row (headrows) in October 2003 with irrigation in Othello, WA for Breeder seed production. Breeder seed was bulk harvested from a reselection of the headrow block, based on uniformity, in August 2004 and planted October 2004 for Foundation seed production.

2004: WA007916 released as the cultivar 'Masami': PI 634715

3. Evidence of Uniformity and Stability:

Except as noted below, Masami has been observed to be stable and uniform with respect to plant morphology since 1993 as an F₃-derived line. This represents thirteen generations (1993-2005) through which this stability and uniformity have been observed.

Based on evaluations of Breeder and Foundation seed lots, Masami may contain up to a total of 1 in 10,000 (0.01% combined) of the following naturally occurring variants: (1) awnless spike, (2) red seed color, (3) leaf color (yellow-green) and (4) reaction to physiological leaf spot (more or less severe). In addition to the above variants the following observation may be made: (1) height variation (2" to 10" taller) may occur at the rate of 1 in 10,000 for heads that are otherwise typical of this variety. Height variation will be noticeable under higher yielding environments. (2) awn length may be variable (awnletted to normal). (3) awn color (red or tan).

These variants described are distinct within the variety and are stable and predictable with a degree of reliability comparable to other varieties of the same kind, and within recognized tolerances when the variety is reproduced or reconstructed and was originally part of the variety when released.

4. Variants during reproduction:

Based on evaluations of experimental, Breeder and Foundation seed lots, no variants other than those noted previously were observed in Masami. Aberrant progeny are rogued from seedstock fields to ensure continued uniformity and stability, but they will continue to occur in every generation.



EXHIBIT B – STATEMENT OF DISTINCTNESS

Masami is most similar to Madsen and Eltan, which it is intended to supplant in the semi-arid production regions of eastern Washington State.

A. Agronomic Characteristics:

Coleoptile length for Masami, Eltan and Madsen are described below. Coleoptile length analysis consists of measuring 10 samples for each variety each year.

1. Analysis of variance combined over two years and two trials indicate that Masami has a significantly longer coleoptile than Madsen and Eltan under uniform growth chamber conditions. Data for each variety are shown in Table A1.

Table A1. Coleoptile length (mm) of Masami, Madsen and Eltan in growth chamber tests.

	2002	2003			t
	n=10	n=10	Mean	N	Grouping
Masami	72.9	88.2	80.6	20	· A
Eltan	64.0	77.6	70.8	20	В
Madsen	46.6	70:6	58.5	20	C
LSD (0.05)	7.99	9.3	8.3		
Critical value of t	2.05	2.05	2.00		
CV	14.2	9.4	18.4		-

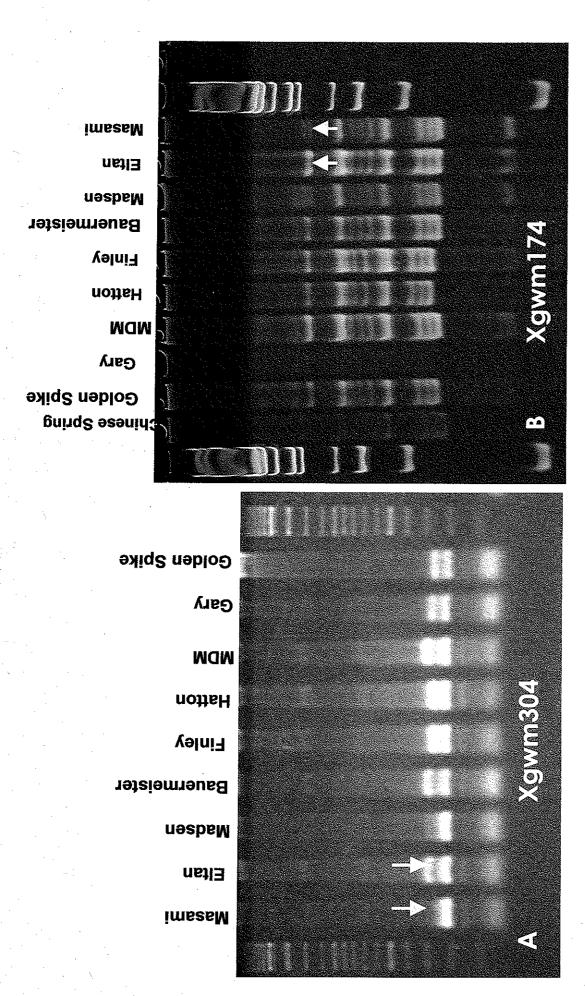
^{*}Combined analysis of variance was conducted after the assumptions for combing data were met (variances were homogenous and the data was distributed normally).

B. Genetic Characteristics

The uniqueness of Masami as compared to Eltan is confirmed by two microsatellite loci, Xgwm304 and Xgwm174 (Figure 1A). It is unique to Madsen as confirmed by microsatellite loci Xgwm427 and Xbarc115 (Figure 1B).

References:

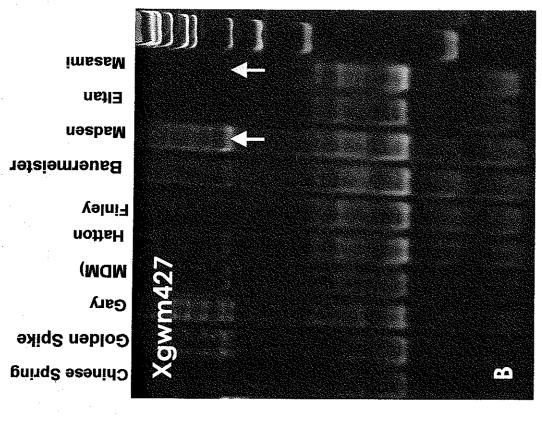
Röder, MS, V Korzun, K Wendehake, J Plaschke, M-H Tixier, P. Leroy, and MW Ganal. 1998. A microsatellite map of wheat. Genetics 149:2007-2023.



Nucleotide sequence distinctiveness of Masami from cultivar Eltan, as evidenced by microsatellite DNA markers. Figure 1.

In PCR using primers for marker Xgwm304, Eltan produces a fragment (white arrow) not present in Masami (indicated with a yellow arrow) PCR with primers for marker Xgwm174 produces a 233 bp fragment in Masami not present in

 $\widehat{\mathbf{n}}$



Nucleotide sequence distinctiveness of Masami from Madsen, as evidenced by microsatellite loci Xbarc115 and Xgwm427, Madsen produces a fragment (white arrow) not present in Masami (indicated with a yellow arrow)

Figure 2.

A X Source Spring Golden Spike Golden Spike Gary MDM Hatton Finley Bauermeister Finley Madsen Eltan Massami

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U.S. DEPARTMENT OF AGRICULTURE **AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY** PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MD 20705

Exhibit C

	BJECTIVE DESCRIPTIOI Wheat (<i>Triticum</i>				
NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNA	TION VARIETY N	AME	·	
Washington State University	WA007916	Masam	ni		
ADDRESS (Street and No. or RD No., City, State, Zip Code and C Dr. Keith Jones, Director Washington State University Research Fo 1610 NE Eastgate Blvd. Pullman, WA 99163		PVPO NUM	IAEUSE ONLY BER 20060	0244	
PLEASE READ ALL INSTRUCTIONS CAREFULL	Υ:				
Place the appropriate number that describes the value when number is either 99 or less or 9 or less respectively. Should be determined from varieties entered in the state designate system used:	stively. Data for quantitative plant charac same trial. Royal Horticultural Society or	cters should be based on a m any recognized color standa	ninimum of 100 plant and may be used to d	s. Comparative dat letermine plant colo	ta ors;
1. KIND: 1 = Common 2 = Durum 3 = Club 4 = Other (Specify)	2. VERI	NALIZATION: 1 = Spring 2 = Winter 3 = Other (Specify)			
3. COLEOPTILE ANTHOCYANIN: 1 1 = Absent 2 = Present	ធា	ENILE PLANT GROWTH: 1 = Prostrate	2 = Semi-Erect	3 = Erect	
5. PLANT COLOR: (boot stage) 1 = Yellow-Green 2 = Green 3 = Blue-Green	6. FLAG 2 2 2	1 = Erect 1 = Not Twisted 1 = Wax Absent	2 = Recurved 2 = Twisted 2 = Wax Present		
Number of Days Later Than *	Eltan Madsen Relative to a PVPO-Approved Commerc	ial Variety Grown in the Sam	- - e Trial		

2 = Purple

8. ANTHER COLOR:

1 = Yellow

1

	·
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Exhibit C (Wheat
9. PLANT HEIGHT: (from soil to top of head, excluding awns) 0 9 2 cm (Average) 0 2 cm Taller Than Madsen	200600244
Same As om Shorter Than Eltan	*
10. STEM:	
A. ANTHOCYANIN	D. INTERNODE
1 = Absent 2 = Present	1 1 = Hollow 2 = Semi-Solid 3 = Solid 5 Number of Nodes
B. WAXY BLOOM	E. PEDUNCLE
2 1 = Absent 2 = Present	1 1 = Erect 2 = Recurved 3 = Semi-Erect 2 5 cm Length
C. HAIRINESS (last internode of rachis)	F. AURICLE
1 1 = Absent 2 = Present	1 Anthocyanin: 1 = Absent 2 = Present 1 Hair: 1 = Absent 2 = Present
11. HEAD: (At Maturity)	
A. DENSITY	C. CURVATURE
2 1 = Lax 2 = Middense (Laxidense) 3 = Dense	1 = Erect 2 = Inclined 3 = Recurved
B. SHAPE	D. AWNEDNESS
1 = Tapering 2 = Strap 3 = Clavate 4 = Other (Specify) Fusiform	1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned
12. GLUMES: (At Maturity)	
A. COLOR	E. BEAK WIDTH
1 = White 2 = Tan 3 = Other (Specify)	1 = Narrow 2 = Medium 3 = Wide
B. SHOULDER	F. GLUME LENGTH
1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate 7 = Other (Specify)	1 = Short (ca. 7 mm) 2 = Medium (ca. 8 mm) 3 = Long (ca. 9 mm)
C. SHOULDER WIDTH	G WIDTH

2 1 = Narrow (ca. 3 mm) 2 = Medium (ca. 3.5 mm) 3 = Wide (ca. 4 mm)

> 1 = Not Present 2 = Present

H. PUBESCENCE

2

D. BEAK

1 = Narrow 2 = Medium 3 = Wide

1 = Obtuse 2 = Acute 3 = Acuminate

13. SE	ED:			
Α.	SHAPE		E. COLOR 200600241	
1	1 = Ovate 2 = Oval 3 = Elliptical		1 = White 2 = Amber 3 = Red 4 = Other (Specify)	_
В.	CHEEK		F. TEXTURE	
1	1 = Rounded 2 = Angular		2 1 = Hard 2 = Soft 3 = Other (Specify)	
C.	BRUSH		G. PHENOL REACTION (See Instructions)	_
1	1 = Short 2 = Medium 3 = Long 1 = Not Collared 2 = Collared		1 = Ivory 4 = Dark Brown 2 = Fawn 5 = Black 3 = Light Brown	
D.	CREASE		H. SEED WEIGHT	
2	1 = Width 60% or less of Kernel 2 = Width 80% or less of Kernel 3 = Width Nearly as Wide as Kernel		3 6 g/1000 Seed (whole number only)	
	1 = Depth 20% or less of Kernel		I. GERM SIZE	
2	2 = Depth 35% or less of Kernel 3 = Depth 50% or less of Kernel		2 1 = Small 2 = Midsize 3 = Large	
14. DIS	EASE: PLEASE INDICATE THE SPECIFIC RACE OR STRA	IN TE	STED	
	(0 = Not Tested 1 = Susceptible	2 = !	Resistant 3 = Intermediate 4 = Tolerant)	
0	Stem Rust (Puccinia graminis f. sp. tritici)	2	Leaf Rust (Puccinia recondita f. sp. tritici)	
2	Stripe Rust (Puccinia striiformis)	0	Loose Smut (Ustilago tritici)	
0	Tan Spot (Pyrenophora tritici-repentis)	0	Flag Smut (Urocystis agropyri)	
0	Halo Spot (Selenophoma donacis)	0	Common Bunt (Tilletia tritici or T. laevis)	
0	Septoria nodorum (Glume Blotch)	3	Dwarf Bunt (Tilletia controversa)	
0	Septoria avenae (Speckled Leaf Disease)	0	Karnal Bunt (<i>Tilletia indica</i>)	
	Septoria tritici (Speckled Leaf Blotch)	2	Powdery Mildew (Erysiphe graminis f. sp. tritici)	
0	Scab (Fusarium spp.)	3	"Snow Molds"	
0	"Black Point" (Kernel Smudge)	0	Common Root Rot (Fusarium, Cochliobolus and Bipolaris spp.)	
0	Barley Yellow Dwarf Virus (BYDV)	0	Rhizoctonia Root Rot (Rhizoctonia solani)	
0	Soilborne Mosaic Virus (SBMV)	0	Black Chaff (Xanthomonas campestris pv. translucens).	
0	Wheat Yellow (Spindle Streak) Mosaic Virus	0	Bacterial Leaf Blight (Pseudomonas syringae pv. syringae)	
0	Wheat Streak Mosaic Virus (WSMV)	2	Strawbreaker foot rot (Pseudocercosporella Other (Specify) herpotrichoides)	
	Other (Specify)	$\overline{\Box}$	Other (Specify)	
П	Other (Specify)	П	Other (Specify)	
	Other (Specify)		Other (Specify)	
15. INSE	CT: (0 = Not Tested 1 = Susceptible 2 = Resistant		3 = Intermediate 4 = Tolerant)	
	PLEASE SPECI	FY B	IOTYPE (where needed)	
0	Hessian Fly (Mayetiola destructor)		Other (Specify)	
0	Stem Sawfty (Cephus spp.)		Other (Specify)	
0	Cereal Leaf Beetle (Oulema melanopa)		Other (Specify)	17

Exhibit C (Wheat)

15. INSECT: (continued	d) (0 = Not Tested	1 = Susceptible	2 = Resistant	3 = Intermediate	4 = Tolerant)		
	· ·	PLEASE :	SPECIFY BIOTYPE	(Where Needed)			
0 Russian Aphic	d (Diuraphis noxía)		Other	(Specify)	,		-
0 Greenbug (So	chizaphis graminum)		Other	(Specify)			-
0 Aphids			Other ((Specify)			-
46 ADDITIONAL INFO	DMATION ON ANY ITE		IFDA AGUITA	· · · · · · · · · · · · · · · · · · ·		25	

EXHIBIT D. OPTIONAL SUPPORTING INFORMATION

Milling and Baking Quality:

Masami has test weight similar to Madsen and Stephens, but slightly less than Lewjain. Its kernel hardness (SK Hardness) is greater than Stephens and Lewjain, but less than Madsen while its kernel weight (SK Weight) is similar to Madsen and Lewjain, but less than Stephens. The milling quality (Mill Score) of Masami is similar to Madsen, Stephens and Lewjain. The RVA values of Masami are typical of a non-waxy type wheat and similar to the check varieties. Its protein strength (Mixograph Abs) is less than Madsen, but equal to Stephens and Lewjain. The cookie diameter of Masami is superior to Madsen and Stephens, but less than Lewjain. Its sponge cake volume is equal to Lewjain and greater than Madsen and Stephens. In conclusion, Masami is a nice compliment to Stephens and Lewjain, two quality soft white winter wheats, and superior in end-use quality to Madsen (Table D1).

Table D1. End-use quality assessment of Masami when summarized by rainfall zones.

Table D1: Means, least significant difference (LSD) and number of pairwise comaparisons made (N) for various milling and baking characteristics between Masami and check varieties Madsen, Stephens and Lewjain when summarized by rainfall zones.

Г	Т	Т		Т		T	1		т-		1	Т			
RE	>20	85.0	83.0	697	∞	×20	85.0	85.7	2.29		>20	87.2*	85.3	1.94	. 4
MILL SCORE	16-20	84.4	84.6	1.79	7	16-20	84.4	83.5	2.49	7	16-20	86.3	86.2	1.60	7
IIM	9I>	83.0	82.1	1.47	17	>16	83.2	82.1	3.37	16	<16	83.4	84.4	2.10	5
J.R.	>20	50.5	48.9	1.03	∞	>20	50.5*	46.1	3.83	∞	>20	50.8*	49.6	1.10	٧
BREAK FLOUR	16-20	50.0	49.8	0.42	7	16-20	\$0.0\$	47.3	1.34	7	16-20	49.5	49.3	1.40	(*
BRI	9I>	49.7*	48.4	0.84	17	>16	49.8*	46.7	1.05	91	91>	49.6	48.8	1.10	12
CD	>20	68.4	67.9	0.80	∞	>20	68.4	68.0	1.13	∞	>20	69.3*	68.0	19.0	9
FLOUR YIELD	16-20	68.2	65.7*	0.38	7	16-20	68.2	68.4	1.30	7	16-20	69.2	0.69	0.50	m
FLO	<16	68.1	68.1	0.61	17	9 I>	68.2	6.79	0.59	16	<16	68.2	0.89	0.97	12
TEIN	>20	10.0	10.7	0.92	∞	>20	10.0	10.5	99.0	∞	>20	9.5	6.7	0.57	9
WHEAT PROTEIN	16-20	*6.6	10.6	69.0	7	16-20	*6.6	10.6	0.64	7	16-20	9.4	9.7	1.97	ო
WHE/	<16	*8.6	10.5	0.45	17	<16	*8.6	10.6	0.38	16 .	9 T>	6.6	10.2	0.46	12
ΙŢ	>20-	37.4	37.2	1.74	8	>20	37.4	47.6*	2.40	8	>20	38.4*	35.4	2.26	9
SK WEIGHT	16-20	35.7	35.3	2.63	7	16-20	35.7	45.9*	2.45	7	16-20	37.3	32.4	7.05	E
Š	91 >	34.9	35.0	1.41	- 17	9 I>	34.9	43.8*	1.90	16	91>	35.6	35.2	2.50	12
ESS	>20	32.0*	37.7	2.34	8	>20	32.0*	25.6	3.76	8	>20	34.3	26.2*	3.96	9
SK HARDNESS	16-20	37.9	41.9	4.69	7	16-20	37.9	31.1	3.66	7	16-20	37.0	24.8	7.58	æ
SK	<16	33.5*	39.2	3.00	17	<16	33.6*	27.1	2.73	16	<16	34.5	29.4*	2.36	12
HT	>20	60.5	60.3	0.54	∞	>20	60.2	60.4	0.79	8	>20	60.7	61.4	0.89	9
TEST WEIGHT	16-20	61.5	61.4	1.03	7	16-20	61.5	9.09	2.45	7	16-20	62.0	62.3	1.90	3
TES	<16	61.3	61.3	0.54	17	9I>	61.2	6.09	0.77	16	√16	61.4	62.6*	0. 2	12
COMPARISON	RAINFALL	Masami	Madsen	LSD	Z	RAINFALL	Masami	Stephens	CST	Z	RAINFALL	Masami	Lewjain	LSD	Z

COMPARISON	FI	FLOUR ASH	HS	FLOU	OUR PROTEIN	LEIN		RVA		MIXO	MIXOGRAPH ABS	ABS	COOK	COOKIE DIAMETER	ETER	CAI	CAKE VOLUME	ME
RAINFALL	>16	16-20	>20	9 1>	16-20	>20	9 I>	16-20	>20	91>	16-20	>20	<16	16-20	>20	9I>	16-20	>20
Masami	0.39	0.37	0.37	8.1*	*L'L	8.0	132.0		130.7	54.2	53.2*	54.1	9.4*	9.4*	9.4*	1320.0*	1280.0	1293.8*
Madsen	0.40	0.38	0.37	9.1	0.6	9.0	128.3		109.3	54.5	54.4	54.7	9.3	9.5	9.2	1221.0	1220.0	1238.8
r CSD	0.02	0.02	0.03	0.41	0.42	0.79	20.08		89.89	0.70	1.13	1.46	80.0	0.16	0.16	76.09		41.09
Z	17	7	80.	17	7	8	3		3	.17	. 7	∞	17	7	00	'n	_	4
RAINFALL	<16	16-20	>20	<16	16-20	>20	· 9I>	16-20	>20	9[>	16-20	>20	<16	16-20	>20	<16	16-20	>20
Masami	0.39	0.37	0.37	*0.8	7.7*	8.0	132.0		130.7	54.2	53.2	54.1	9.4*	9.4*	9.4	1320.0*	1280.0	1293.8*
Stephens	0.40	0.39	0.35	8.9	8.7	8.5	131.7		130.3	54.8	54.2	54.3	9.3	9.3	9.4	1244.0	1245.0	1255.0
CSI	0.05	0.02	0.03	0.33	0.61	0.65	38.99		29.95	0.88	2.45	1.03	60.0	0.12	0.11	64.58		18.80
Z	16	7	8	16	7	8	3		3	16.	~	∞	16	7	~	, 'Y		4
RAINFALL	<16	16-20	>20	<16	16-20	>20	>16	16-20	>20	<16	16-20	>20	>16	16-20	>20	9 <u>1</u> >	16-20	>20
Masami	0.39	0.36	0.35	8.3*	7.3	7.7	123.5		137.5	55.0	53.6	53.3	9.3	9.3	9.3	1297.5	1	1262.5
Lewjain	0.37	0.36	0.35	8.7	8.0	8.1	115.0		119.5	55.1	54.1	54.2	9.4	9.3	9.5	1306.3		1290.0
TSD	0.03	0.01	0.04	0.39	1.74	0.51	82.59		114.40	0.70	3.80	1.03	0.12	0.31	0.20	94.89		95.30
N	12	33	9	12	ы	9	2		2	11	c,	5	12	3	9	ব		2

* Significantly different at alpha = 0.05.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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